ATTACHMENT J3

Hill AFB Water Distribution System

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J3.1 Hill AFB Overview

Located in the Salt Lake Valley west of the Wasatch Mountains and overlooking the Great Salt Lake to the west, Hill Air Force Base (HAFB) is seven miles south of Ogden, Utah and 35 miles north of Salt Lake City. The Main Base occupies approximately 6,689 acres, 6,641 Fee and 48 leased (primarily railroad). Outlying installations include the Little Mountain Test Annex (740 acres), 25 miles northwest of the Base between Ogden City and the Great Salt Lake, and the Utah Test and Training Range (UTTR). The UTTR consists of 954,471 acres and almost 13,000 nautical square miles of airspace approximately 50 air miles west of HAFB.

Acquisition of land began in the 1940s when approximately 3,200 acres, comprising the western side of Hill AFB, was acquired from the Army. Another major acquisition occurred in 1977 when Hill acquired 760 acres from Ogden Arsenal. Approximately 120 other fee tracts, ranging from a fraction of an acre to 320 acres, were acquired from businesses and individuals through the 1940s and 1950s. Approximately 30 additional fee tracts were acquired in the 1960s and 1970s as part of the Air Installation Compatible Use Zones (AICUZ) initiative. By executive order, the vast majority of the UTTR was "withdrawn" from the Bureau of Land Management (North Range in 1940 and South Range in 1941). Little Mountain was acquired (Fee) in 1957.

Hill AFB has 1,916 structures, 1,371 buildings, and over 14 million square feet (msf) of floor space comprised of the following major functional categories: Industrial: 4,542,697 square feet (SF); Administrative: 1,542,797 SF; Military Family Housing (MFH): 1,607,605 SF; Unaccompanied Housing: 261,410 SF; Transient Quarters: 55,168 SF; and Other Community/Support: 696,137 SF; and other facilities: 5,300,000 SF.

Hill AFB expects to add 48 additional facilities totaling 957,115 square feet over the next 10 years, and an additional 9 facilities with approximately 601,483 square feet between 10 - 20 years. Hill will require the Contractor to provide all supporting utilities and will negotiate appropriate fee increases to cover the cost of utility construction.

The Base has a 13,500-foot runway that handles more than 40,000 takeoffs and landings annually. It also has 228 miles of roadway and 28 miles of railroad.

J3.1.1 Installation History

The present day Hill AFB has its roots in two separate entities: the Ogden Arsenal and Hill Field. Though these installations existed as neighbors for over a decade, and for years were both within the structure of the U.S. Army, they pursued separate missions.

Ogden Arsenal, originally established to store surplus World War I munitions, became an important supply center during World War II. The Installation stored and shipped a full range of ordnance and transportation equipment. The Arsenal also manufactured various munitions during World War II.

Hill Field was constructed in response to a War Department initiative in 1939 to increase arms production and expand military operations. Hill Field, southeast of the Arsenal, served as a supply center, but its focus was air material, repair, and maintenance of aircraft. In November 1940, the Army Air Corps activated on Hill Field the Ogden Air Depot.

After World War II, the dominant role of Hill Field was the storage of over 1,200 aircraft and support equipment. Hill Field became Hill AFB in 1948 with the establishment of the U.S. Air Force as a separate service. With the onset of the Korean War, Hill AFB reactivated and returned to flying readiness B-26 and B-29 aircraft. In 1955, the Base nearly doubled in size with the annexation of the adjacent Arsenal and the broad physical parameters that currently describe Hill AFB were established.

J3.1.2 Mission, Organization, and Associate Units

Hill AFB and its associate units, Little Mountain Test Annex and the UTTR, occupy a vital place in the Air Force and Air Force Material Command (AFMC) inventory of installations. The host organization is the Ogden Air Logistics Center (OO-ALC). The Base also hosts more than 40 tenants, including combat forces (the 388th Fighter Wing and the 419th Fighter Wing [Air Force Reserve]) as well as the Defense Megacenter Ogden and the Defense Logistics Agency (DLA).

The OO-ALC provides worldwide engineering support and logistics management for the F-16 Flying Falcon as well as maintaining F-16 and C-130 aircraft. More than 250 aircraft and 16,800 avionics and structural components are processed annually. Hill AFB is also responsible for worldwide logistics management for the nation's fleet of intercontinental ballistic missiles. The Base overhauls and repairs landing gear, wheels, and brakes; rocket motors; air munitions and guided bombs; photonics equipment; training devices; avionics; instruments; hydraulics; software and other aerospace related components.

The UTTR is used for tests of conventional and smart munitions, missile motors, and long-range standoff weapons. It also supports tactical aircraft, bomber, and helicopter training and large force exercises.

Major units at Hill AFB include:

- 388th Fighter Wing (Air Combat Command)
- 419th Fighter Wing (Air Force Reserve)
- Defense Megacenter Ogden (Defense Information Systems Agency)
- Defense Depot Hill Utah (Defense Logistics Agency)
- Defense Commissary Agency
- Defense Finance and Accounting Agency
- Defense Contract Audit Agency
- Air Force Judiciary Area Defense Counsel
- Defense Reutilization and Marketing Office
- Army and Air Force Exchange Service
- Air Force Audit Agency

- Air Force Office of Special Investigations, Detachment 113
- Air Education and Training Command
- U.S. Army Corps of Engineers
- Tooele Army Depot Rail Center
- Small Business Administration
- Forest Service (U.S. Department of Agriculture)

J3.1.3 Population

The Base population profile is as shown in the following table:

Category	Population
Active Duty U.S. Military	4,625
Air National Guard/Air Force Reserve	1,112
Appropriated Fund Civilians (including Reserve technicians)	11,187
Non-appropriated Fund Civilians	363
Private Business (Bank/Credit Union)	30
Contractors	3,718
Active Duty Military Dependents (resident on Base)	3,500
Total	24,535*
*Includes Little Mountain Test Annex and UTTR	

J3.1.4 Housing

Hill AFB has 1,141 MFH units located in three areas on the Base. Area A (14 units), located in the western edge of the Base immediately north of the 1200 Area; Area B (11 units), located in the center of the Main Base; and Areas D/E/F/G (1,116 units) located in the southwest corner of the Base.

The units in Areas A and B were built in the 1930s and 1940s, Areas D/E (500 units) in the mid-1960s, and Area F (270 units) in the mid 1970s. The 350 units in Area G were built in the mid-1990s to replace the 350 units that were demolished in the old Area C located to the east of the runway. Currently, the 1,116 MFH units in Areas D/E/F/G are being considered for privatization.

J3.1.5 Utah Test and Training Range

UTTR is a very large and isolated aerial gunnery, bombing and test range located approximately 50 miles due west of Hill AFB (west side of the Great Salt Lake). UTTR total land area covers 1.8 million acres. The aerial portion of the range is considerably larger (13,000 square miles) and merges with Dugway Proving Ground's air space, some 50 miles to the south. The central cantonment area for UTTR is referred to as Oasis. It is comprised of several facilities housing range control, safety, civil engineering, explosive ordnance

disposal (EOD), vehicle maintenance, fire department, security, billeting, food service, and multi-purpose recreation activities. The entrance to the UTTR munitions/missile storage area (MSA) is located approximately one mile to the north of Oasis. The MSA encloses 2,858 acres. Apart from the Oasis central cantonment area, there are several small isolated sites (Grassy Mountain, Diddle Knoll, and several others) that accommodate radar, communications, telemetry, and photographic activities. These sites are situated either on mountain peaks or on sites adjacent to the targets. Oasis population remains fairly stable through the workweek with many employees choosing to live in Government quarters rather than commute daily to their homes in distant cities. (Normally, the UTTR is on a four-day workweek, four 10-hour shifts.) The population diminishes considerably on weekends with only a handful of security and fire protection personnel remaining on site. Most of the isolated sites remain unmanned except for special range events. Average site population is approximately 30 contract personnel and 120 Government employees (military and civilian). Utility systems are Government-owned and operated by Air Force civilian employees.

J3.1.6 Little Mountain Test Annex

The Little Mountain Test Annex is located approximately 26 miles northwest of Hill AFB, adjacent to the Great Salt Lake. The total site covers 750 acres; the Main Cantonment area covers about 50 acres and is comprised of 16-18 buildings with an aggregate of 140,000 square feet. The site was constructed in the late 1950s, closed for a period of time in the late 1960s, and then subsequently reopened. Facilities are high-tech test facilities with special electrical loads and demanding HVAC parameters. Site population consists of approximately 60-70 contract test personnel plus four civil engineer craftsmen all of whom work an extended shift (10 hours/day) Monday through Thursday. Three firemen remain on site round-the-clock. Utility systems are Government-owned and operated by Air Force civilian employees.

J3.1.7 Geographically Separated Units

Other geographically separated units (GSUs) are summarized below:

WENDOVER FIELD

Wendover Field is a radar, telemetry, and microwave communications site located approximately 150 miles west of Hill AFB on the Utah-Nevada border. In years past, the site had an airstrip but it has since been turned over to the City of Wendover, Utah. The Air Force compound covers approximately 160 acres.

BOVINE

Bovine is a radar site approximately 30 miles east of Motello, Nevada and 54 miles due north of Wendover Field.

TROUT CREEK

Trout Creek is a complex very similar to Bovine on the Utah-Nevada border.

CARTER CREEK

Carter Creek is an Air Force-owned recreational facility located approximately 110 miles from Hill AFB.

BOULDER

The Boulder, Wyoming site, also known as Pinedale, is a special test facility located approximately 125 miles northeast of Hill AFB.

J3.2 Water Distribution System Description

J3.2.1 Water Distribution System Fixed Equipment Inventory

The Hill AFB water distribution system consists of all appurtenances physically connected to on-base wells, pumping stations, water treatment components and (for off-base sources) the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to wells, pumps, water treatment components, pipelines, valves, fire hydrants, storage facilities, exterior backflow devices, pumps, and meters. The actual inventory of items sold will be in the Bill of Sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor's proposal shall be based on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

All water rights (pumping or purchased) will remain with the Government.

Specifically excluded from the water distribution system privatization package:

- Non-potable water fire protection system, including deluge tanks, pipe, pumps, etc.
- Irrigation systems.

J3.2.1.1 Description

MAIN BASE

Hill AFB receives water from two sources: on-base deep wells and off-base from the Weber Basin Conservancy District (WBCD).

The Delta Aquifer is the major source of water for Hill AFB. The principal water-bearing zone varies from 50 to 150 feet in thickness at a depth ranging from 480 to 520 feet below the ground surface. Although acceptable for consumption, water tends to be "hard" and contains iron, calcium, sodium, and magnesium. Nine deep wells, depth ranging from 700 to 1,100 feet, provide potable water for the Installation. Wells 1, 2, 3, 5, 7, 8, and 9 are equipped with emergency generators. Water treatment at the Base consists of chlorination, fluoridation, and phosphate added to the water at the well site with, unmanned injection systems. (Well #4 is not currently used for potable water production because of extremely high iron content. This well requires re-drilling before it can be fully integrated into the potable water system.) Hill AFB is permitted to pump a maximum of 7,820,434 gallons per day from deep wells on the Main Base.

The supplemental water source (WBCD) supplies treated water to the Base at a single point near the South Gate entrance. A contract between Hill AFB and WBCD, dated 12 December 1952, requires WBCD to provide 1,018.79 acre-feet/year (approximately 333 million gallons). The contract also requires that WBCD have available 2,500 gallons per minute (gpm) at the point of delivery and that not less than 1.5 million gallons per day (gpd) be available. A single meter owned by WBCD measures consumption of WBCD water. The WBCD water allocation is a very important resource and must be used every year. If the allocation is not used, WBCD water may be reallocated to other users in this water-starved region. The WBCD allocation is used primarily between mid-May to December (peak usage months) to reduce the demand for well water. Historically, WBCD provided approximately one-third of the potable water used in the Main Base area. A vital feature of the WBCD water allocation is related to total annual consumption and the longstanding, very favorable sales rate. If the allocation quantity were to be exceeded for three consecutive years, then WBCD would have the right to renegotiate the "grandfathered" sales rates.

In the older areas of the Base, water pipe material is mostly cast iron pipe with leaded joints. Some areas of family housing have asbestos cement pipe installed in the 1960s. Water lines installed after the mid-1980s have been PVC class C900 with tracer wire and warning tape. Average depth of burial of water mains is approximately eight feet.

Water is stored in six reservoirs with total capacity of 8.3 million gallons; the three steel tanks are cathodically protected.

A SCADA system is used to monitor water levels in the various tanks, and is used to control well pumps, booster pumps, and treatment processes either automatic or manual modes.

A separate fire protection system (not included in this privatization package) is provided to furnish water to large buildings requiring fire flows greater than can be provided by the potable water system.

LITTLE MOUNTAIN TEST ANNEX

The water system at Little Mountain Test Annex is supplied with potable water from WBCD through a 16-inch (WBCD-owned) supply line. (This water main exceeds the size of water mains on the Hill AFB itself. The enormous size of this water main is related to a long past mission requirement.) Water purchased from WBCD is piped and distributed under pressure directly into the Little Mountain system. Water is metered at the annex entry point. An Air Force-owned chlorination station, also located at the annex entrance, maintains chlorine residuals. The Air Force-owned distribution system is comprised of 8-inch and 6-inch PVC pipe (C-900) mains and smaller building services. The distribution system is approximately six to eight years old and in very good condition.

The 650,000-gallon storage tank is for non-potable fire protection purposes and is excluded from the privatization package.

UTTR

All potable water for UTTR is supplied by two wells located in the Oasis cantonment area. Well #1 produces water at the rate of 300 gpm, with Well #2 producing water at the rate of 160 gpm. A relatively new PVC pipeline moves raw water from the wells to a relatively new (less than 5 years old) reverse osmosis treatment plant, rated at 6,000 gallons per hour.

Because of the inferior quality of the water in Well #1, normally only Well #2 is used for potable water while Well #1 water is used primarily for dust control. (Well #1 water could be treated and used for potable water but it would require frequent recalibration of the treatment processes.) Treated water is pumped to two 500,000-gallon water storage tanks situated on a hill overlooking the complex; the tanks are cathodically protected. The water distribution system, with the recent doubling of water storage capacity and the replacement of some of the major transite mains, is in very good condition.

The water distribution system is limited to the Oasis complex because of the great distances and limited need at the remote sites. Water is delivered by either tank truck or by the bottle to these locations.

OTHER GSUS

WENDOVER FIELD. Water distribution is provided by the City of Wendover.

BOVINE. Water is transported to the site by bottle; there are no Air Force-owned distribution systems to be privatized at this site.

TROUT CREEK. There are no Air Force-owned distribution systems to be privatized at this site.

BOULDER. The water system consists of a well and approximately 260 feet of distribution lines, according to Real Property records. No water system drawings were available for this area.

CARTER CREEK. The water system is comprised of a well, approximately 1,500 feet of water lines, and a 5,000-gallon steel water storage tank, according to Real Property records. A small booster pump provides water pressure for the bathrooms. No water system drawings were available for this area.

J3.2.1.2 Inventory

Table 1 lists major components of the Hill AFB water distribution system included in the sale. Drawings used to develop the inventory were the Hill Air Force Base Water Supply System, Tab G-1, Sheets 1-5 (1993) and water utility drawings for UTTR and Little Mountain.

TABLE 1
Fixed Inventory
Water Distribution System – Hill AFB

Component	Size	Unit	Quantity	Approximate Year of Construction
MAIN BASE				
Pipe				
Cast Iron	<2″	LF	3,040	1940
Cast Iron	<2″	LF	250	1941
Cast Iron	2-2 ½″	LF	5,010	1940
Cast Iron	2-2 ½″	LF	3,170	1941
Cast Iron	2-2 ½″	LF	990	1960
Cast Iron	3″	LF	160	1940

Component	Size	Unit	Quantity	Approximate Year of Construction
Cast Iron	3″	LF	440	1960
Cast Iron	4″	LF	1,930	1960
Cast Iron	4″	LF	1,980	1964
Cast Iron	6″	LF	57,170	1940
Cast Iron	6″	LF	32,210	1941
Cast Iron	6″	LF	15,560	1960
Cast Iron	6″	LF	10,960	1964
Cast Iron	8″	LF	47,430	1940
Cast Iron	8″	LF	83,000	1941
Cast Iron	8″	LF	4,690	1960
Cast Iron	8″	LF	5,600	1964
Cast Iron	10″	LF	33,550	1940
Cast Iron	10″	LF	23,010	1941
Cast Iron	10″	LF	3,980	1960
Cast Iron	10″	LF	7,330	1964
Cast Iron	12″	LF	15,000	1940
Cast Iron	12″	LF	29,340	1941
Cast Iron	12″	LF	8,900	1960
Cast Iron	12″	LF	980	1964
Cast Iron	14″	LF	15,930	1940
Cast Iron	14″	LF	1,600	1941
Cast Iron	16″	LF	5,000	1940
Cast Iron	16″	LF	300	1941
Ductile Iron	20″	LF	2,800	1941
Ductile Iron	24″	LF	4,900	1941
Ductile Iron Steel	24″	LF	890	1999
PVC	6″	LF	1,860	1993
PVC	8″	LF	2,320	1993
PVC	10′′	LF	4,380	1993
Services and Valves				
Cast Iron Pipe (Services)	3″	LF	17,300	1940
Cast Iron Pipe (Services)	3″	LF	8,900	1941
Cast Iron Pipe (Services)	3″	LF	900	1960
Cast Iron Pipe (Services)	3″	LF	400	1964
PVC Pipe (Services)	3″	LF	800	1993
Valves (Services)	3″	EA	173	1940
Valves (Services)	3″	EA	89	1941
Valves (Services)	3″	EA	9	1960
Valves (Services)	3″	EA	4	1964
Valves (Services)	3″	EA	8	1993
Service Connections		EA	173	1940
Service Connections		EA	89	1941
Service Connections		EA	9	1960
Service Connections		EA	4	1964
Service Connections		EA	8	1993

Component	Size	Unit	Quantity	Approximate Year of Construction
Gate Valves (Mains)	<2″	EA	15	1940
Gate Valves (Mains)	<2″	EA	1	1941
Gate Valves (Mains)	2-2 ½″	EA	25	1940
Gate Valves (Mains)	2-2 ½″	EA	16	1941
Gate Valves (Mains)	2-2 ½″	EA	5	1960
Gate Valves (Mains)	3″	EA	1	1960
Gate Valves (Mains)	4″	EA	4	1960
Gate Valves (Mains)	4″	EA	4	1964
Gate Valves (Mains)	6″	EA	230	1940
Gate Valves (Mains)	6″	EA	22	1960
Gate Valves (Mains)	6″	EA	3	1964
Gate Valves (Mains)	6″	EA	3	1993
Gate Valves (Mains)	8″	EA	292	1941
Gate Valves (Mains)	8″	EA	9	1964
Gate Valves (Mains)	8″	EA	2	1993
Gate Valves (Mains)	10″	EA	120	1940
Gate Valves (Mains)	10″	EA	6	1964
Gate Valves (Mains)	10″	EA	10	1993
Gate Valves (Mains)	12″	EA	15	1940
Gate Valves (Mains)	12″	EA	29	1941
Gate Valves (Mains)	12″	EA	9	1960
Gate Valves (Mains)	12″	EA	1	1964
Gate Valves (Mains)	14″	EA	16	1940
Gate Valves (Mains)	14″	EA	2	1941
Gate Valves (Mains)	16″	EA	5	1940
Gate Valves (Mains)	20″	EA	3	1941
Gate Valves (Mains)	24″	EA	5	1941
Gate Valves (Mains)	24″	EA	1	1999
Backflow Preventers				
Backflow Preventers	1 ½″	EA	50	1960
Backflow Preventers	2″	EA	220	1960
Backflow Preventers	3″	EA	20	1960
Backflow Preventers	4″	EA	10	1960
Fire Hydrants				
Fire Hydrants		EA	231	1940
Fire Hydrants		EA	237	1941
Fire Hydrants		EA	9	1960
Fire Hydrants		EA	11	1964
Fire Hydrants		EA	12	1993
Water Storage Tanks				
Elevated - #12402	350,000 gal	EA	1	1980
Ground - #1433	2MG	EA	1	1998
Ground - #10725	3.5MG	EA	1	1996
Ground - #12412	1MG	EA	1	1985
Ground - #10781	200,000 gal	EA	1	1980

Component	Size	Unit	Quantity	Approximate Year of Construction
Ground - #10853	1.25MG	EA	1	1980
Cathodic Protection Components				
Tank #12402				
Magnesium Anodes	#9	EA	12	1980
Cable	#2	LF	500	1980
Rectifier	28V/10A	EA	1	1980
Reference Cell		EA	1	1980
Test Station		EA	1	1980
Tank #10781				
Magnesium Anodes	#9	EA	12	1980
Cable	#2	LF	500	1980
Rectifier	28V/10A	EA	1	1980
Reference Cell		EA	1	1980
Test Station		EA	1	1980
Tank #10853				
Magnesium Anodes	#9	EA	12	1980
Cable	#2	LF	500	1980
Rectifier	28V/10A	EA	1	1980
Reference Cell		EA	1	1980
Test Station		EA	1	1980
Wells and Components				
Well #1				
Pump and Column		HP	200	2000
Drilling, Screening, and Casing		LF	900	2000
Surface Seal Well #1 Concrete Filled		LS	1	2000
Develop Well #1		LS	1	2000
Pump Test		LS	1	2000
Sterilization		LS	1	2000
Pump Controls		EA	1	2000
Building		SF	600	2000
Electric Connections		EA	1	2000
Motor Starter and Controls		EA	1	2000
Service Panel for Electrical Lights and Interior Heater		EA	1	2000
Interior Step-down Transformer Dry Type	5 kVA	EA	1	2000
Commercial Heater (Interior)	3000 W	EA	1	2000
Chlorination Equipment		EA	1	2000
Fluoridation Equipment		EA	1	2000
Emergency Generator		EA	1	2000
Meter		EA	1	2000
Well #2				
Pump and Column		HP	200	1998
Drilling, Screening, and Casing		LF	900	1985
Surface Seal Well #2 Concrete Filled		LS	1	1985

Component	Size	Unit	Quantity	Approximate Year of Construction
Develop Well #2		LS	1	1941
Pump Test		LS	1	1941
Sterilization		LS	1	1985
Pump Controls		EA	1	1985
Building		SF	957	1998
Electric Connections		EA	1	1985
Motor Starter and Controls		EA	1	1985
Service Panel for Electrical Lights and Interior Heater		EA	1	1985
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1985
Commercial Heater (Interior)	3000 W	EA	1	1985
Chlorination Equipment		EA	1	1985
Fluoridation Equipment		EA	1	1985
Emergency Generator		EA	1	1985
Meter		EA	1	1985
Well #3				
Pump and Column		HP	200	1999
Drilling, Screening, and Casing		LF	900	1941
Surface Seal Well, #3 Concrete Filled		LS	1	1941
Develop Well #3		LS	1	1941
Pump Test		LS	1	1941
Sterilization		LS	1	1941
Pump Controls		EA	1	1999
Building		SF	314	1999
Electric Connections		EA	1	1999
Motor Starter and Controls		EA	1	1999
Service Panel for Electrical Lights and Interior Heater		EA	1	1999
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1999
Commercial Heater (Interior)	3000 W	EA	1	1999
Chlorination Equipment		EA	1	1999
Fluoridation Equipment		EA	1	1999
Emergency Generator		EA	1	1999
Meter		EA	1	1999
Well #4				
Pump and Column		HP	200	1943
Drilling, Screening, and Casing		LF	900	1943
Surface Seal Well, #4 Concrete Filled		LS	1	1943
Develop Well #4		LS	1	1943
Pump Test		LS	1	1943
Sterilization		LS	1	1943
Pump Controls		EA	1	1943
Building		SF	455	1943
Electric Connections		EA	1	1943

Component	Size	Unit	Quantity	Approximate Year of Construction
Motor Starter and Controls		EA	1	1943
Service Panel for Electrical Lights and Interior Heater		EA	1	1943
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1943
Commercial Heater (Interior)	3000 W	EA	1	1943
Meter		EA	1	1943
Well #5				
Pump and Column		HP	200	2000
Drilling, Screening, and Casing		LF	900	2000
Surface Seal Well, #5 Concrete Filled		LS	1	2000
Develop Well #5		LS	1	2000
Pump Test		LS	1	2000
Sterilization		LS	1	2000
Pump Controls		EA	1	2000
Building		SF	489	2000
Electric Connections		EA	1	2000
Motor Starter and Controls		EA	1	2000
Service Panel for Electrical Lights and Interior Heater		EA	1	2000
Interior Step-down Transformer Dry Type	5 kVA	EA	1	2000
Commercial Heater (Interior)	3000 W	EA	1	2000
Chlorination Equipment		EA	1	2000
Fluoridation Equipment		EA	1	2000
Emergency Generator		EA	1	2000
Meter		EA	1	2000
Well #6				
Pump and Column		HP	200	1999
Drilling, Screening, and Casing		LF	900	1999
Surface Seal Well, #6 Concrete Filled		LS	1	1999
Develop Well #6		LS	1	1999
Pump Test		LS	1	1999
Sterilization		LS	1	1999
Pump Controls		EA	1	1999
Building		SF	614	1999
Electric Connections		EA	1	1999
Motor Starter and Controls		EA	1	1999
Service Panel for Electrical Lights and Interior Heater		EA	1	1999
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1999
Commercial Heater (Interior)	3000 W	EA	1	1999
Chlorination Equipment		EA	1	1999
Fluoridation Equipment		EA	1	1999
Meter		EA	1	1999

Component	Size	Unit	Quantity	Approximate Year of Construction
Well #7				
Pump and Column		HP	200	1985
Drilling, Screening, and Casing		LF	900	1985
Surface Seal Well #7 Concrete Filled		LS	1	1985
Develop Well #7		LS	1	1985
Pump Test		LS	1	1985
Sterilization		LS	1	1985
Pump Controls		EA	1	2000
Building		SF	494	2000
Electric Connections		EA	1	2000
Motor Starter and Controls		EA	1	2000
Service Panel for Electrical Lights and Interior Heater		EA	1	1985
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1985
Commercial Heater (Interior)	3000 W	EA	1	1985
Chlorination Equipment		EA	1	1985
Fluoridation Equipment		EA	1	1985
Emergency Generator		EA	1	2000
Meter		EA	1	1985
Well #8				
Pump and Column		HP	200	1990
Drilling, Screening, and Casing		LF	900	1988
Surface Seal Well #8 Concrete Filled		LS	1	1988
Develop Well #8		LS	1	1988
Pump Test		LS	1	1988
Sterilization		LS	1	1988
Pump Controls		EA	1	1990
Building		SF	655	1990
Electric Connections		EA	1	1990
Motor Starter and Controls		EA	1	1990
Service Panel for Electrical Lights and Interior Heater		EA	1	1988
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1988
Commercial Heater (Interior)	3000 W	EA	1	1990
Chlorination Equipment		EA	1	1988
Fluoridation Equipment		EA	1	1988
Emergency Generator		EA	1	1990
Meter		EA	1	1990
Well #9				
Pump and Column		HP	200	1988
Drilling, Screening, and Casing		LF	900	1988
Surface Seal Well, #9 Concrete Filled		LS	1	1988
Develop Well #9		LS	1	1988
Pump Test		LS	1	1988

Component	Size	Unit	Quantity	Approximate Year of Construction
Sterilization		LS	1	1988
Pump Controls		EA	1	1988
Building		SF	655	1988
Electric Connections		EA	1	1988
Motor Starter and Controls		EA	1	1988
Service Panel for Electrical Lights and Interior Heater		EA	1	1988
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1988
Commercial Heater (Interior)	3000 W	EA	1	1988
Chlorination Equipment		EA	1	1988
Fluoridation Equipment		EA	1	1988
Emergency Generator		EA	1	1988
Meter		EA	1	1988
MILITARY FAMILY HOUSING (HOUSING AREAS D, E, F, AND G)				
Pipe				
PVC	2 ½″	LF	1,130	1978
PVC	2-2 ½″	LF	230	1994
PVC	3″	LF	340	1978
PVC	3″	LF	370	1994
PVC	4″	LF	2,740	1978
PVC	4″	LF	3,820	1994
PVC	6″	LF	3,340	1978
PVC	6″	LF	15,120	1994
PVC	8″	LF	2,650	1978
PVC	12″	LF	1,900	1994
Cast Iron	6″	LF	23,120	1960
Cast Iron	8″	LF	2,940	1960
Ductile Iron	14″	LF	920	1994
Services and Valves				
Cast Iron Pipe (Services)	2″	LF	14,850	1960
PVC Pipe (Services)	2″	LF	13,050	1978
PVC Pipe (Services)	2″	LF	12,225	1994
Valves (Services)	2″	EA	198	1960
Valves (Services)	2″	EA	174	1978
Valves (Services)	2″	EA	163	1994
Service Connections		EA	198	1960
Service Connections		EA	174	1978
Service Connections		EA	163	1994
Gate Valves (Mains)	2 ½″	EA	6	1978
Gate Valves (Mains)	2-2 ½″	EA	1	1994
Gate Valves (Mains)	3″	EA	1	1978
Gate Valves (Mains)	3″	EA	1	1994
Gate Valves (Mains)	4″	EA	5	1978
Gate Valves (Mains)	4″	EA	8	1994

Component	Size	Unit	Quantity	Approximate Year of Construction
Gate Valves (Mains)	6″	EA	63	1960
Gate Valves (Mains)	6″	EA	5	1978
Gate Valves (Mains)	6″	EA	46	1994
Gate Valves (Mains)	8″	EA	3	1960
Gate Valves (Mains)	8″	EA	5	1978
Gate Valves (Mains)	12″	EA	2	1994
Gate Valves (Mains)	14″	EA	1	1994
Fire Hydrants				
Fire Hydrants		EA	43	1960
Fire Hydrants		EA	22	1978
Fire Hydrants		EA	27	1994
LITTLE MOUNTAIN				
Cast Iron Pipe	4″	LF	4,900	1960
PVC Pipe	4″	LF	7,500	1997
Gate Valves (Mains)	4″	EA	10	1960
UTTR				
AC (Transite) Pipe	3″	LF	8,840	1963
PVC Pipe	8″	LF	37,500	1998
PVC Pipe	10″	LF	5,500	1998
Fire Hydrants		EA	32	1998
Gate Valves (Mains)	3″	EA	4	1963
Gate Valves (Mains)	8″	EA	60	1998
Gate Valves (Mains)	10″	EA	4	1998
Water Treatment Plant (Reverse Osmosis)		EA	1	1998
Water Storage Tanks				
Ground Storage Tank	500,000 gal	EA	1	1964
Ground Storage Tank	500,000 gal	EA	1	2000
Cathodic Protection Components				
Magnesium Anodes	#9	EA	12	1964
Magnesium Anodes	#9	EA	12	2000
Cable	#2	LF	500	1964
Cable	#2	LF	500	2000
Rectifier	28V/10A	EA	1	1964
Rectifier	28V/10A	EA	1	2000
Reference Cell		EA	1	1964
Reference Cell		EA	1	2000
Test Station		EA	1	1964
Test Station		EA	1	2000
Wells and Components				
Well #1				
Pump and Column		HP	30	1997
Drilling, Screening, and Casing		LF	900	1990
Surface Seal Well #1 Concrete Filled		LS	1	1990
Develop Well #1		LS	1	1990

Component	Size	Unit	Quantity	Approximate Year of Construction
Pump Test		LS	1	1997
Sterilization		LS	1	1997
Pump Controls		EA	1	1997
Building		SF	100	1990
Electric Connections		EA	1	1990
Motor Starter and Controls		EA	1	1990
Service Panel for Electrical Lights and Interior Heater		EA	1	1990
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1990
Commercial Heater (Interior)	3000 W	EA	1	1990
Meter		EA	1	1990
Well #2				
Pump and Column		HP	25	1998
Drilling, Screening, and Casing		LF	900	1990
Surface Seal Well #2 Concrete Filled		LS	1	1990
Develop Well #2		LS	1	1990
Pump Test		LS	1	1998
Sterilization		LS	1	1998
Pump Controls		EA	1	1998
Building		SF	100	1990
Electric Connections		EA	1	1990
Motor Starter and Controls		EA	1	1990
Service Panel for Electrical Lights and Interior Heater		EA	1	1990
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1990
Commercial Heater (Interior)	3000 W	EA	1	1990
Meter		EA	1	1990
BOULDER RADAR REMOTE RELAY STATION				
Cast Iron Pipe	4″	LF	260	1958
Gate Valves (Mains)	4″	EA	1	1958
Well and Components				
Well #1				
Pump and Column		HP	25	1958
Drilling, Screening, and Casing		LF	900	1958
Surface Seal Well #1 Concrete Filled		LS	1	1958
Develop Well #1		LS	1	1958
Pump Test		LS	1	1958
Sterilization		LS	1	1958
Pump Controls		EA	1	1958
Building		SF	100	1958
Electric Connections		EA	1	1958
Motor Starter and Controls		EA	1	1958
Service Panel for Electrical Lights and Interior Heater		EA	1	1958

Component	Size	Unit	Quantity	Approximate Year of Construction
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1958
Commercial Heater (Interior)	3000 W	EA	1	1958
Chlorination Equipment		EA	1	1958
Fluoridation Equipment		EA	1	1958
CARTER CREEK				
PVC Pipe	4″	LF	1,500	1986
Gate Valves (Mains)	4″	EA	3	1986
Booster Pump Station				
Building		SF	100	1968
Pump 10A, Piping, and Controls		HP	2	1996
Well and Components				
Well #1				
Sterilization		LS	1	1958
Pump Controls		EA	1	1958
Building		SF	100	1958
Electric Connections		EA	1	1958
Motor Starter and Controls		EA	1	1958
Service Panel for Electrical Lights and Interior Heater		EA	1	1958
Interior Step-down Transformer Dry Type	5 kVA	EA	1	1958
Commercial Heater (Interior)	3000 W	EA	1	1958
Chlorination Equipment		EA	1	1958
Fluoridation Equipment		EA	1	1958
BOOSTER PUMP STATIONS				
Station 782				
Pump 2A, Piping, and Controls		HP	75	1999
Pump 2B, Piping, and Controls		HP	75	1998
Pump 2C, Piping, and Controls		HP	100	1996
Station 852				
Pump 5A, Piping, and Controls		HP	100	1996
Pump 5B, Piping, and Controls		HP	100	1957
Station 781				
Pump 6A, Piping, and Controls		HP	75	1995
Pump 6B, Piping, and Controls		HP	75	1995
Station 887				
Building		SF	600	1952
Pump 8A, Piping, and Controls		HP	100	1993
Pump 8B, Piping, and Controls		HP	75	1994
Station 565				
Building and Piping		SF	402	1968
Pump10A, Piping, and Controls		HP	75	1996
Pump10B, Piping, and Controls		HP	100	1968

Component	Size	Unit	Quantity	Approximate Year of Construction
Notes:				
EA = each	HP = horsepower			
LF = linear feet	gal = gallons			
PVC = polyvinyl chloride	MG = million gallons			
SF = square footage	W = watts			
kVA = kilovolt ampere	LS = lump sum			
V = volt	A = ampere			

J3.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools

Tables 2 and **3** list ancillary equipment (spare parts) and specialized vehicles and tools included in the purchase.

TABLE 2
Spare Parts
Water Distribution System - Hill AFB

Item	Quantity	Location	Description
Valves, Flanges, Couplers & Fittings	Quantity Varies	Utility Shop	Varies sizes and types
Pipe	Quantity Varies	Utility Shop	Various sizes (1″ – 6″)

TABLE 3
Specialized Vehicles and Tools
Water Distribution System - Hill AFB

Description	Size	Location	Description	Maker
None.				

J3.2.3 Water Distribution System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Water Distribution System - Hill AFB

Quantity	Item	Description	Remarks
1	Utility Drawing Set	Comprehensive Plan, Tab G-1, 1993	Sheets 1 - 5
1	Utility Drawing	UTTR Water System	
1	Utility Drawing	Little Mountain Water System	
1	Water Valve Survey Library	Multiple Volumes	Points of Reference; Large Scale
1	Well & Pump	Multiple Volumes	Includes well drilling

Quantity	Item	Description	Remarks
	Reference Library		logs, pump data, etc.
1	Pumping Log	(State Required)	Record of pumping for the past 7 years
1	Backflow Device Records	(State/Federal Requirement)	

J3.3 Specific Service Requirements

The service requirements for the Hill AFB water distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Hill AFB water distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- The Contractor will be required to mark his own utilities and will be responsible for initiating, officiating, and tracking digging permits for his own utilities. The Contractor will provide not less than 2 and not more than 5 working days notice (emergencies being excepted) of any needed excavations to 75 CES and to said Utilities Privatization Administrative Contracting Officer so the location of underground utilities may be located and marked by the applicable utility owner. The applicable utility owner must mark their utilities as requested within 48 hours of receipt of request for non-emergency work.
- The Contractor shall enter into a Memorandum of Understanding (MOU) with the Base Fire Department for fire protection of all facilities included in the purchase of the utility. The MOU shall be completed during the transition period and a copy provided to the Contracting Officer.
- Because of the critical nature of many Hill AFB mission requirements, response to water problems must be immediate. For the Main Base, the Contractor must have a first response on the scene not later than 30 minutes (24 hours a day / 7 days a week) after notification.
- The Contractor shall perform flow testing of fire hydrants IAW National Fire Protection Association (NFPA) standards/recommended practices. The Government reserves the right to review flow test records. The Contractor shall be required to meet all unique and specific fire-flow requirements for the Base, which will be listed and available in the Utilities Privatization Technical Library. Markings of the fire hydrants shall be IAW Hill AFB Architectural Compatibility Standards (dated 1/1997).

J3.4 Current Service Arrangement

Most (two-thirds) of the potable water for the Base is supplied by nine ground wells with the reminder provided via a supplemental water supply arrangement with the Weber Basin Conservancy District (WBCD). (Paragraph J3.2 covers this service arrangement in more

detail and describes the service for the GSUs.) **It is imperative to understand that all water and pumping rights, including the water allocation from WBCD will remain with the Government.**

Monthly water consumption (from wells and WBCD) for the Main Base and Housing for fiscal years 1998 through 2002 are provided in the following table:

MAIN BASE													
PRODUCED UNITS (KGALS)													
FY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
98	54893	70938	70938	70938	70938	70938	38257	0	39799	39799	57654	41643	626734
99	4610	4107	3381	32689	26502	34118	40443	37132	58576	70171	48227	38041	397997
00	18440	8628	4301	47189	36527	36839	53090	62985	63445	66684	77355	35095	510578
01	8335	22221	34196	37746	35584	35998	46699	71034	49457	55398	57051	38847	492566
02	36628	21081	20523	43924	35958	39688	43421	47858	51810	60044	90778	26232	517945
PURCHASED UNITS (KGALS)													
FY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
98	40483	52316	52316	52316	52316	52316	0	0	7286	7286	20292	18996	355923
99	33240	34897	36821	4114	2621	0	31	1131	16290	34067	41958	35125	240296
00	26287	35726	36298	4939	0	0	0	7285	32602	40231	23717	31652	238737
01	39535	19384	0	0	0	0	0	9046	31032	31025	33157	34678	197857
02	9894	25132	29067	1307	137	261	380	271	26429	35597	35662	3299	197137
HOUSING													
PRODUCED UNITS (KGALS)													
FY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
98	29558	13512	13512	13512	13512	13512	7287	0	21430	21430	31045	22423	200733
99	2482	782	644	6226	5048	6499	7704	19994	31541	37784	25969	20484	165157
01	4488	4232	6513	7190	6778	6857	8895	38249	26631	29830	30720	20917	191300
02	19723	4015	3909	8366	6849	7560	8271	25769	27898	32331	48881	14125	207697
PURCHASED UNITS (KGALS)													
FY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
98	21798	9965	9965	9965	9965	9965	0	0	3923	3923	10926	10229	100625
99	17899	6647	7014	784	499	0	6	609	8772	18344	22593	18913	102078
00	14154	6805	6914	941	0	0	0	3923	17555	21663	12771	17043	101769
01	21288	3692	0	0	0	0	0	4871	16709	16706	17854	18673	99793
02	5328	4787	5537	249	26	50	72	146	14231	19168	19203	17768	86564

J3.5 Secondary Metering

J3.5.1 Existing Secondary Meters

Table 5 would ordinarily reflect a listing of the existing secondary meters that would be transferred to the Contractor. Though there are no "secondary meters", the meters listed in the following table are located at each well head and are used to monitor the pumping of each well. These meters will be transferred to the new system owner. The Contractor shall provide meter readings for these meters IAW Paragraph C.3.3 and J3.6 below.

TABLE 5
Existing Secondary Meters
Water Distribution System - Hill AFB

Building No.	Location
Well #1	Main Base
Well #2	Main Base
Well #3	Main Base
Well #4	Main Base
Well #5	Main Base
Well #6	Main Base
Well #7	Main Base
Well #8	Main Base
Well #9	Main Base
Well #1	UTTR
Well #2	UTTR

J3.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3.3 and J3.6 below.

TABLE 6
New Secondary Meters
Water Distribution System - Hill AFB

Meter Location	Meter Description
None	

J3.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. **Invoice** (IAW G.2)**:** The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

   Name: 75 CES/CEEE (AF Utilities Privatization)
   Address: 7302 Wardleigh Road
   Hill AFB, UT 84056
   Phone number: (801) 777-5944

2. **Outage Report:** The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   Name: 75 CES/CEI (AF Utilities Privatization)
   Address: 7302 Wardleigh Road
   Hill AFB, UT 84056
   Phone number: (801) 777-5944

3. **Meter Reading Report:** The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. The report will include a summary of water quantities pumped from deep wells and a summary of purchased water from WBCD. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   Name: 75 CES/CEEE (AF Utilities Privatization)
   Address: 7302 Wardleigh Road
   Hill AFB, UT 84056
   Phone number: (801) 777-5944

4. **System Efficiency Report:** If required by Paragraph C.3, the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   Name: 75 CES/CEI (AF Utilities Privatization)
   Address: 7302 Wardleigh Road
   Hill AFB, UT 84056
   Phone number: (801) 777-5944

J3.7 Water Conservation Projects

Water conservation will always remain a high priority at Hill AFB. The Installation has invested heavily and wisely in a SCADA system that resulted in peak summer usage dropping from 9 millions gallons per day (MGD) to approximately 7 MGD. Any new owner of the water distribution system must cooperate with the Installation as it continues an aggressive water conservation program.

J3.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Hill AFB boundaries and the boundaries of Hill GSUs listed in the following paragraph.

J3.9 Off-Installation Sites

Sites off the main Installation and their respective water systems are described in Paragraph J3.2.1.1. UTTR, Little Mountain, Boulder, and Carter Creek all have components included in this privatization package. Wendover, Bovine and Trout Creek have no water distribution components to be privatized.

J3.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 8** provides a listing of service connections and disconnections required upon transfer. Intent is to separate the electric, natural gas, and water distribution systems in the military family housing areas from the main base. The wastewater collection system is not to be separated and will remain as a base utility system.

TABLE 8
Service Connections and Disconnections
Water Distribution System - Hill AFB

Description
Description of Scope to Sever electrical, natural gas and water distribution systems from main base to Military Family Housing at Hill AFB **Introduction:** This narrative is a description of the basic scope of required tasks to sever the Hill AFB electrical, natural gas, and water distribution systems from housing areas D, E, F, and G, and should be construed as part of a service contract or any other legally binding document. The information herein was derived by studying utility maps and interviewing personnel in CE's Exterior Electrical Shop and Utility Shop. In order to actually implement the recommendations of this document, a thorough inspection involving excavations should be done prior to the preparation of engineered drawings and specifications. Under this plan, the Youth Center (building 883) and Southwest Gate Guard Shack (building 8886) should still be supplied electric, and water by the Hill AFB distribution system. There is no gas service to the guard shack at this time and none is planned.

1. Water – Currently, Hill AFB supplies water via lines that connect to MFH at the following eight locations:

a. Metering Station/Press Regulator #1 (12" cast iron main connecting to 6" PVC at the southwest corner of Sixth Street and Liberty way).
b. Metering Station/Press Regulator #9 (8" asbestos cement line running southwest of the northwest corner of building 800 across 11th Street).
c. Valve at the northeast corner of Youth Center parking lot, across North Liberty Street, south of housing unit #4201 where an 8" cast iron line branches off to the Tank Farm.
d. Valve behind and between MFH unit #4242, and #4244 on Shenandoah Circle where a 12" cast iron line comes in from the base to supply water to Area G Housing.
e. Valve behind and between MFH unit #4278, and #4280 on Jamestown Circle where a 6" cast iron line comes in from the base to supply water to Area G Housing.
f. A 14" PVC junction two locations behind and between MFH unit #4347, and #4349 on Truman Circle.
g. A junction about 100' east of the valve behind the south end of the DRMO Compound and 100 LF southwest of housing unit #4238 where an 8" cast iron line runs from the DRMO Compound into Area G Housing.
h. Valve south of the DRMO Compound and north of Pond 7 where a 6" PVC line supplies water to Area F Housing through the DRMO Compound.

The MFH distribution system would need to be severed from Hill AFB system at these locations. The MFH connection from an existing pump house located between Appomattox Circle and Jamestown Circle behind the housing units would need to be severed as well. The base system runs through this pump house, supplying water pressure for the base system. An agreement would have to be reached with the new housing provider to allow the base pump house to remain where it is, even though it would provide no benefit to the MFH areas.

1.1. MFH areas would then need to be supplied Weber Basin water from an underground line along Highway 193 on the south end, and from a 16" line on the north end of the MFH that runs from a storage tank on base to Clearfield City. The connection on the south end could be done in two places. The first could be an 8" lateral to tee from the Weber Basin line along HWY 193 and run about 225 LF to valve #33-8 located between Pond 4 and housing unit #3317 on the south side of Liberty Street. The second could be an 8" lateral to tee from the Weber Basin line along HWY 193, at a location between the UDOT Equipment Lot off HWY 193 and the backyards of housing units #3110 and #3112 in Revere Circle. The lateral would have to run north up to 12th Street, then turn northwest and cross 12th Street in front of housing unit #3101, and run along the border of MFH Areas D&E and the Pond 3 Recreation Area in a northwesterly direction until it connects up with the 8" line that connects MFH with Meter Station #9 at a location north of housing units #3032 and #3036. The entire length of this second lateral would be approximately 3,000 LF.

1.2. Two laterals could connect the northern housing areas with the Weber Basin line that runs from the storage tank to Clearfield City. The first could tee off the Weber Basin line behind housing units #4373 and #4375, run about 200 LF and connect to MFH system near hydrant #8-47. The second lateral could tee off the Weber Basin Line just west of the railroad tracks and run approximately 600 LF to connect to MFH system near hydrant #8-117.

1.3. The MFH system loop would have to be closed in three locations. The first closure would be to connect the sever point north of Pond 7 to the sever point southwest of housing unit #4238 with a 6" PVC line approximately 700 feet long. The second closure would need to connect the severed pump house line with the sever point between housing units #4278 and #4280 with a 6" PVC loop about 400 feet in total length. The third closure would need to connect the sever point south of housing unit #4201 to the sever point at the valve between housing units #4242 and #4244 with a 6" PVC line that runs approximately 800 LF along the border of MFH Area G and the Tank Farm.

1.4. The base water distribution system would also have to be closed in at three locations. The first closure would be to connect the sever point southwest of housing unit #4238 to the 6" main that runs along the railroad tracks north of Area G housing, with a 6" PVC line at an approximate distance of 2,200 LF. The second closure would need to start at the severed base supply lines between housing units #4347 and #4349, run in a southeasterly direction approximately 2,700 LF to pick up the severed end at the valve between housing units #4278 and #4280 and connect to the line that feeds the north end of the Tank Farm. Finally the loop that supplies water to the Youth Center (building 883) and hydrants #8-65 and #8-123 in the Tank Farm needs to be closed by connecting the severed 12" cast iron feed line, north of the Tank Farm to the line that was severed south of housing unit #4201 with an 8" PVC line approximately 800 feet long.

J3.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Hill AFB water distribution system. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 8
System Deficiencies
Water Distribution System - Hill AFB

Project Location	Project Description
Main Base Area	Water quality in Well #4 has deteriorated and cannot be integrated into the potable water system. The well needs to be re-drilled with replacement of all pumps and treatment equipment, piping, controls, emergency generator and well house. Scope should be similar to recent upgrades on Wells 1, 5, and 7. Currently all fire hydrants do not meet the NFPA code as they are painted brown. All fire hydrants need to be repainted to meet code and appropriately marked.